

# Geometry

## Assignment #3

### Isosceles Triangles

1.  $AB \cong AC$  and  $FB \cong FC$ .

a. label this information in the diagram

b. Prove that  $\angle ABF \cong \angle ACF$ .

given: 1

problem: 2

solution:

• 3

•  $\angle ABC \cong \angle ACB$

• 5

•  $\angle ABF + \angle FBC \cong \angle AFC + \angle FCB$

• 7

conclusion:

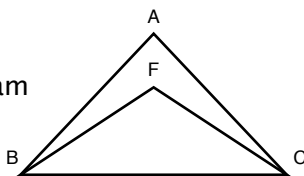
given

4

because  $\triangle FBC$  is isosceles

6

8



2.  $AB \cong AC$

a. label this information in the diagram

b. Prove that  $\angle B \cong \angle C$ .

given:

problem:

solution:

• 9

• Let  $D$  represent the midpoint of  $BC$

You should draw this point ( $D$ ) and segment ( $AD$ ) on your picture.

•  $AD$  is the bisector of  $\angle A$

•  $\angle BAD \cong \angle DAC$

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•  $\triangle BAD \cong$  13

•  $\angle B \cong \angle C$

conclusion:

given

every segment has a midpoint

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reflexive property

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